CLAIMS

1. A method of treating inflammatory bowel disease in a subject, said method comprising:

administering a medicament comprising an amount of a cytokine-producing Gram-positive bacterial strain or a cytokine antagonist-producing Gram-positive bacterial strain to said subject.

2. The method according to claim 1 wherein the cytokine or cytokine antagonist is selected from the group consisting of IL-10, a soluble TNF receptor or another TNF antagonist, an IL-12 antagonist, an Interferon-γ antagonist, an IL-1 antagonist, a virus-coded cytokine analogue, and EBV BCRF1.

3. The method according to claim 1 wherein the Gram-positive bacterial strain is a *Lactococcus* species.

4. The method according to claim 3 wherein the *Lactococcus* species is *Lactococcus lactis.*

5. The method according to claim 1 wherein the Gram-positive bacterial strain is selected from the group consisting of *Bacillus subtilis*, *Streptococcus gordonii, Staphylococcus xylosus*, and a *Lactobacillus spec.*

6. The method according to claim 1 wherein the bowel disease is selected from the group consisting of chronic colitis, Crohn's disease and ulcerative colitis.

7. The method according to claim 1 wherein the medicament is administered in combination with at least one additional therapeutic agent.

8. The method according to claim 7 wherein the at least one therapeutic agent is selected from the group consisting of corticosteroids, sulphasalazine, derivatives of

sulphasalazine, immunosuppressive drugs, cyclosporin A, mercaptopurine, azathioprine, and another cytokine.

9. The method according to claim 7 wherein the co-administration of the at least one additional therapeutic agent is sequential or simultaneous.

10. The method according to claim 1 wherein the medicament is delivered through *in situ* synthesis by recombinant *L. lactis*.

11. The method according to claim 2 wherein the Gram-positive bacterial strain is a *Lactococcus* species.

12. The method according to claim 11 wherein the *Lactococcus* species is *Lactococcus lactis*.

13. The method according to claim 2 wherein the Gram-positive bacterial strain is selected from the group consisting of *Bacillus subtilis*, *Streptococcus gordonii, Staphylococcus xylosus*, and a *Lactobacillus spec*.

14. The method according to claim 2 wherein the bowel disease is selected from the group consisting of chronic colitis, Crohn's disease and ulcerative colitis.

15. The method according to claim 2 wherein the medicament is administered in combination with at least one additional therapeutic agent.

16. The method according to claim 15 wherein the at least one therapeutic agent is selected from the group consisting of corticosteroids, sulphasalazine, derivatives of sulphasalazine, immunosuppressive drugs, cyclosporin A, mercaptopurine, azathioprine, and another cytokine.

17. The method according to claim 15 wherein the co-administration of the at least one additional therapeutic agent is sequential or simultaneous.

18. The method according to claim 2 wherein the medicament is delivered through *in situ* synthesis by recombinant *L. lactis*.

19. A genetically engineered Gram-positive bacterial strain selected from the group consisting of *Bacillus subtilis*, *Streptococcus gordonii, Staphylococcus xylosus*, and a *Lactobacillus* species, said genetically engineered Gram-positive bacterial strain engineered to express a cytokine or cytokine antagonist selected from the group consisting of IL-10, a soluble TNF receptor or another TNF antagonist, an IL-12 antagonist, an Interferon-γ antagonist, an IL-1 antagonist, a virus-coded cytokine analogue, and EBV BCRF1.

20. A pharmaceutical composition comprising the genetically engineered Gram-positive bacterial strain of claim 19.

SEQUENCE LISTING

<110> Steidler, Lothar

Remaut, Erik

Fiers, Walter

<120> USE OF A CYTOKINE-PRODUCING LACTOCOCCUS STRAIN TO TREAT COLITIS

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<150> PCT/EP99/07800

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